EUMEDA ELONGATA.

The long anal joins the caudal and extends upwards on the end of the tail; the colour (in spirits) is brown, becoming lighter on the lower parts; the fins have a yellowish tinge.

The specimen is four and a half inches long. From the Brisbane River, Rockhampton.

PROPOSED ZOOLOGICAL STATION FOR SYDNEY.

By N. DE MIKLUCHO-MACLAY.

The last meeting of the Linnean Society afforded me an opportunity of referring to the subject of a zoological station. On the present occasion I wish to point out the chief considerations which show the necessity of such an institution, to mention a few facts with regard to institutions of this kind already existing, and to bring before your notice those circumstances which would seem to facilitate the establishment of such a station in Sydney.

I shall make my communication as brief as possible, because, in the first place, it seems scarcely necessary to advocate at great length the utility of zoological stations in general before a scientific audience, and secondly, my knowledge of the English language is not extensive enough to permit me to enter upon a very full discussion.

The chief reason why the establishment of zoological stations becomes every day a matter of increasing importance, and presses itself more and more upon the attention of scientific societies, are two in number.

The *first* is the fact that *museums prove insufficient* for the study of anatomy, histology, and still more embryology, if these studies are to satisfy the demands of modern science. In this fact we find the repetition of the universal rule, that as a science develops itself the field of its investigation is correspondingly enlarged, new and difficult problems present themselves, and the progress of the science depends upon the progressive discovery and application of new or improved appliances. It is not only that the

specimens preserved in museums are often *unsuited* to anatomical investigations, and altogether incapable of being used in those pertaining to histology ; but the amount of material in museums is generally *insufficient in quantity.* Now it is undoubtedly upon the quality aud quantity of material at command that the value and completeness of the investigation very obviously depend. *Secondly :* Although, hitherto, most scientific travellers follow the same routine, and devote their time and energies to collecting, and that often in the field of several sciences, I cannot but think that the time has arrived when this method should be abandoned, and that in place of mere collecting or making collections, the *great aim of travel should be observation and investigation* exercised immediately, and upon the spot. For this reason I believe that the establishment of zoological stations in various parts of the world corresponding to the regions in which its fauna is distributed from being a fond hope or pious wish will, under the *pressure of absolute necessity* turn into an *accomplished fact.*

The establishment of the Zoological Station in Naples, successful as it has been, and attended with most important results, offers us a proof and confirmation of what I have stated.

But in addition to these two main reasons for looking upon zoological stations in general as things of immediate necessity, another presents itself from a different quarter. I mean the circumstance, that next after the tropics (which are the richest in animal life), the widest field offered to the investigator of nature, and consequently the most suitable region for the establishment of zoological stations, is Australia, with a fauna so interesting, so important and so very far from sufficiently known, especially as regards anatomy and embryology. Such a country would be *the place* for a zoological station, or to speak more correctly, for *several* such stations.

But perhaps many of those whom I have the honor of addressing, while they will agree with me in most of the considerations above submitted, and attach due importance to the Australian fauna, and to the necessity of more thorough investigations of it than collections and museums can supply, would ask me what is to be understood by a zoological station ?

To comprise the answer in as few words as possible, "*it is a laboratory established for conducting investigations in anatomy, embryology, histology, and, if possible, physiology as well.*" The idea is not a new one. In the year 1868, Dr. Anton Dohrn and myself were stopping in Messina for the purpose of zoological studies, and we then became convinced that the establishment of zoological stations was becoming a *vital question, and a necessity for science.* That this was not merely my conviction I will show by quoting the words of my friend Dr. Dohrn himself:—"In "spite of a tolerably rich supply of instruments and books, I "must, in my regard for the truth, confess that my performances "fell very far short of my expectations. It fared no better with "my Russian companion, Mikluho-Maclay. We were striking "examples of both the cases described above, of labor expended "to no purpose, and we were both brought spontaneously to "reflect on the great advantages which we might have derived "from a well-established laboratory."*

For *ten* years past I have often found myself, during my travels, in circumstances similar to those experienced in Messina. During my wanderings I have often found myself lodged for weeks and months together in the houses and palaces of noble and even Royal hosts, and yet how gladly would I have exchanged the comforts and splendour of such dwellings for a small but tolerably well furnished laboratory where *undisturbed* and *undisturbing* I could have carried on my work.

When I arrived in Sydney about six weeks ago, I found myself once more in a similar position.

I had in my voyage from Singapore to this place so far recovered from an illness arising out of a prolonged residence in New Guinea, that I was once more able to work; but there was no suitable place to work in. Ten or twelve days elapsed, and I was still idle. Probably a still longer period would have passed in the same conditions, had not the friendly proposal of Mr. W.

* *A. Dohrn.* Der gegenwertige Stand der Zoologie, und die Gründung Zoologischer Stationen. Preussische Jahrbücher, Vol. XXX., p. 8 of copy. To those who are interested in this question, I cordially recommend the perusal of the article above quoted, as likewise of another by the same author—Die Einweihung der Zoologischer Station zu Neapel. Vol. XXXV.

Macleay, that I should work in his museum, and his kind offer of hospitality, both of which I thankfully accepted, afforded me the opportunity of continuing my pursuits and saving my time from further waste.

I can even adduce statistical proof to show that mine *is no exceptional case*, but that the *same want* has operated elsewhere.

In the pamphlet upon the opening of the zoological station in Naples in the year 1865, I find this announcement. While in former years the number of zoologists visiting Naples probably fluctuated between *four* and *eight*, already in the first year, from Easter, 1874, to Easter, 1875, no less than *thirty-six* "savans," scientific investigators, have pursued their investigations on marine animals in the zoological station. Of this number 2 were Austrians, 4 Italians, 5 Englishmen, 5 Dutch, 5 Russians, and 15 Germans. That through the establishment of a tolerably good laboratory the number has increased *sixfold*, is a striking testimony *that there is no dearth of willing workers and competent men, but only of suitable places to work in.*

I would add a few words on the stations already existing, and on those projected.

Whether the embryo of the zoological station in Messina, at which Dr. Dohrn and myself laboured, has received further development I know not, but Dr. Dohrn founded what is properly speaking, the *first zoological station* at Naples. This establishment, which cost him about 100,000 thalers, for which the town of Naples gave him gratuitously, but under certain conditions, the best site on the seashore in the Villa Reale, and of which I now present the photographic view, is described by its founder in a letter to me as "*prosperous and flourishing.*" But this letter was written in the year 1875, and since that time I have been for more than two years out of reach of any communication by the post.

In America a similar institution was established in New York under the direction of Professor Alexander Agassiz, and a similar one was projected in Trieste in connection with the Universities of Vienna and Gratz.

Two others have also been established, one in Holland and the other in the English Channel on the Island of Jersey.

In consequence of a prolonged abode in Johor (in the south of the Malay Peninsula), I endeavoured in 1875 to establish a zoological station there. The site, in the very midst of the tropical world, and in the neighbourhood of Singapore appeared to me especially adapted for such a purpose.* This undertaking had nearly reached its completion: the site, a small island, had been liberally guaranteed to me by the British Government, and the plan of the small building had been laid out, when a new voyage to the islands of the Pacific and also New Guinea, interrupted my personal superintendence of the execution of my plan. When, after two years' absence, I arrived at Singapore, I learned to my great sorrow and annoyance that, in spite of all that I had done, my proposal had not arrived at its accomplishment. The illness which ensued upon my return to Singapore—which is also one of the causes which has impelled me to visit Australia—rendered any renewal of my attempt impossible. But I hope, if my wandering life allows it, to realise my deep-felt desire for the establishment of a station in the tropics. The place which I have in view for that purpose is Kema, to the north of the Island of Celebes.

After this short historical survey of the gradual rise of zoological stations, I return to my proposal and pass from the theoretical to the *practical side.*

To summarise briefly what is wanted. We require a *workshop*—a *laboratory for zoological students in the widest sense of the word.* It may at first be a single well-lighted room of tolerable size, furnished with some of the most necessary implements. The full apparatus and furniture may be completed hereafter. Everyone who works at the station will gladly undertake, after the completion of his investigations, to increase the original stock by the gift of the appliances which he has needed for his own labour. *The immediate need is not of apparatus, but of a place for undisturbed work*—a suitable convenient room, or, better still, a small detached cottage built for the purpose.

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* See "Nature," Vol. XII., No. 304, p. 382.

I would venture to point out a site which appears *to me most suitable* for the object in view ; it is the locality in the neighbourhood of Mr. W. Macleay's Museum. The great advantages of this site are the following :—

1. The *Macleay Museum* offers an excellent general view of the Australian fauna, and that of the surrounding countries.

2. Mr. Macleay will, doubtless, not refuse the use of his rich *Zoological Library* to any working naturalist.

3. The *neighbourhood of the sea* is of great importance for the study of the marine fauna, and for the establishment of an aquarium, which will probably be set up in due time in the proposed station.

4. In Mr. Macleay the institution would find *a most competent director* ; his great zoological acquirements especially as regards the fauna of Australia, New Guinea, &c., will be of the utmost importance and utility for every naturalist who comes to Sydney, and desires to occupy himself with thorough investigations in Australian zoology ; this I can state from personal experience. His love of natural science, and the interest which he consequently takes in its advancement, which the proposed institution *is certain to develope to no small extent*, are guarantees that under *his* guidance and inspection the station will be maintained in a *flourishing* condition.

The conditions which I have enumerated, namely a suitable site, *close to the sea*, and in the *neighborhood of a good museum and a rich library*, together with the *important addition of a thoroughly competent director*, are such as bear me out in the assertion which I have made above, that Sydney possesses *unusual* facilities for the establishment of a *first zoological station in Australia.*

I trust that the distinguished society which I have the honor of addressing, will coincide with me in these views, and that looking upon this undertaking as one every way worthy of a scientific body they will take into consideration the best means of giving speedy effect to a plan of which the honor will belong to themselves, but the benefits will be felt and recognised by the world at large.

If the society regard the establishment of such a zoological station desirable, I shall have much pleasure in laying before its next meeting a *sketch of the building required*, together with a *brief table of rules* as to the mode in which the station shall be used.

NOTE.—A Committee of Members was appointed to consider Baron Maclay's proposal, and to report thereon at the next monthly meeting of the Society.

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LEPIDOPTERA having the ANTLIA terminal in a TERETRON or BORER.

By REGINALD BLIGH READ, M.R.C.S.

Plate 14.

EARLY in the present year, (1878) the enquiry was addressed to the Microscopical Section of the Royal Society of New South Wales, on behalf of the President of the Royal Microscopical Society of London, H. T. Slack, Esq—"Whether there existed in the colony any butterflies or moths with a boring proboscis similar to those which attack the orange tree in South Australia?" which was sent on to this Society to answer. Mr. Slack's enquiry was a little puzzling, since it is the orange and not its tree which is attacked by these Lepidoptera, which are fortunately very rare in those districts adjacent to Sydney which are the chief commercial seat of the production of the orange in Australia.

The fertilisation of flowers by insects has led botanists to bestow particular attention to the arrangements whereby insects are attracted to flowers as well as those various modifications of the organs of the flower by which its cross-fertilisation may be most readily effected. In the study of the antlia of these Lepidoptera which assist in this fertilisation, the entomologist will find a large field, hitherto scarcely touched upon, and which will prove the more interesting, as it will have, probably, an important part in the future classification of Lepidoptera. In the genus which forms the subject of this paper the adaptation of the organ is of a most remarkable character.